

Supplementary Figure 1. Screenshots of examples SNPs in the genes identified generated by targeted DNA next-generation sequencing in Emirati diabetic patients. Mutations generated using vcftools and visualized using IGV.

[illegible]

The screenshot displays the IGV (Integrative Genomics Viewer) interface. At the top, a search bar contains the text "chr11:11,400,000-11,400,100". Below the search bar, a track labeled "chr11:11,400,000-11,400,100" shows a genomic region with a scale bar indicating positions from 11,400,000 to 11,400,100. The main panel shows a coverage track with a peak at approximately 11,400,050, followed by a track of individual sequencing reads. The reads are color-coded by base call (A, C, G, T) and show some mismatches from the reference. The bottom track, labeled "Annotations", displays gene models and other genomic features. The interface includes a sidebar on the left with tabs for "Genomes", "Tracks", "Regions", "Tools", "GenomeSpace", "Help", and "Interact".

The screenshot displays the JBrowse genome browser interface. At the top, a navigation bar includes a search bar, a zoom control, and a list of tracks. The main view shows a genomic track for the human genome, specifically the region 11p13.1-p13.2. The track is divided into several sections: 'Genes' (showing genes like PLEKHA7, PLEKHA7-AS1, and PLEKHA7-AS2), 'Transcripts' (showing transcripts for these genes), 'Variants' (showing SNPs and other variants), and 'Annotations' (showing various genomic features). The bottom track shows the 'Sequence' (raw sequencing data) and 'Paralogs' (showing paralogous regions). The interface includes a search bar at the top left, a zoom control at the top right, and a list of tracks on the left side.

[illegible]

Supplementary Figure 2; List of the location and functional consequences of rs4573668 as predicted by SNPnexus tool.

Variation ID	Chromosome	Position	Variant	Strand	Symbol	Gene	Transcript	Predicted Function	CDNA Position	CDS Position	AA Position	AA Change	Detail	Splice Distance	Proteins
rs4573668	chr11	43681065	G/C	1	HS017812	ENSG00000149084	ENST0000037401	Intronic	None	None	None	None	None	78	None
rs4573668	chr11	43681065	G/C	1	HS017812	ENSG00000149084	ENST0000031185	Intronic	None	None	None	None	None	78	None
rs4573668	chr11	43681065	G/C	1	HS017812	ENSG00000149084	ENST0000036007	Intronic	None	None	None	None	None	78	None
rs4573668	chr11	43681065	G/C	1	AC068205.2	ENSG00000283341	ENST0000032864	non-coding intronic	None	None	None	None	None	40031	None
rs4573668	chr11	43681065	G/C	1	AC068205.2	ENSG00000283341	ENST00000329261	non-coding intronic	None	None	None	None	None	7926	None
rs4573668	chr11	43681065	G/C	1	HS017812	ENSG00000149084	ENST0000038034	Supstream	None	None	None	None	None	None	None
rs4573668	chr11	43681065	G/C	1	HS017812	ENSG00000149084	ENST00000327433	Intronic	None	None	None	None	None	261	None
rs4573668	chr11	43681065	G/C	1	HS017812	ENSG00000149084	ENST0000036722	coding	271	238	80	V>L	nonsyn	None	ME5AIPAAAGFLWV VGAGTVAYLALRIS YSUFTAIRVWGVG NEAGVGPGLGEW AGESDAAPRPRSR GGPDQAWAVMTS SGVCSWSPSPQLS SPSGSCAPRAPGS LGCLLA*)MESAL PAAGFLWVGAGT VAYLAIRISYSLFTA LRVWGVGNAGV GPGLGEWAGESDA APIPRSRGGPDQA WAVMTSSGLCSW PSPQLSSPSGSCA PRAPPGSLGCLLA *
rs4573668	chr11	43681065	G/C	1	HS017812	ENSG00000149084	ENST00000278353	Intronic	None	None	None	None	None	78	None
rs4573668	chr11	43681065	G/C	1	HS017812	ENSG00000149084	ENST00000395700	Intronic	None	None	None	None	None	78	None

Supplementary Table 1: Enriched Ontology Clusters of the identified 34 genes associated with the UAEDIA-phenotypes.

Pathway Id	Pathway Description	Parent Description	Genes	Gene Count
R-HSA-1266738	Developmental Biology	Developmental Biology	HNF1B,FES,FOXO3,HOXA3	4
R-HSA-162582	Signal Transduction	Signal Transduction	FES,MADD,FOXO3,PRC1	4
R-HSA-1430728	Metabolism	Metabolism	HSD17B12,STARD3,NAT2	3
R-HSA-1433557	Signaling by SCF-KIT	Signal Transduction	FES,FOXO3	2
R-HSA-196071	Metabolism of steroid hormones	Metabolism	HSD17B12,STARD3	2
R-HSA-556833	Metabolism of lipids	Metabolism	HSD17B12,STARD3	2
R-HSA-8957322	Metabolism of steroids	Metabolism	HSD17B12,STARD3	2

Supplementary Table 2. List of the 4 identified SNPs in HSD17B12 gene in two Emirati diabetic patients, with their location and significance in gene expression.

ID	SNP	Chromosome	Position	Overlapped Gene	Annotation
chr11:43681065:G/C:1	rs4573668	chr11	43681065	HSD17B12	intronic,coding nonsyn,5upstream
chr11:43750999:A/G:1	rs12801203	chr11	43750999	HSD17B12	intronic,non-coding intronic
chr11:43754184:A/G:1	rs4643069	chr11	43754184	HSD17B12	intronic,non-coding intronic,3downstream
chr11:43830941:T/C:1	rs6485471	chr11	43830941	HSD17B12	intronic,non-coding intronic,non-coding